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(21)Application number : 02-125471 (71)Applicant : SUMITOMO
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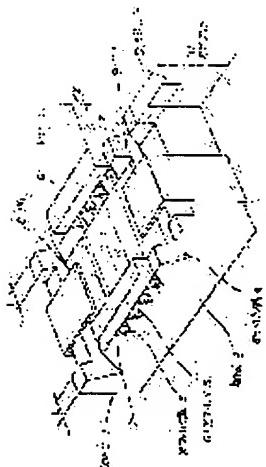
(54) INTEGRATED OPTICAL FIBER FUNCTION PARTS

(57)Abstract:

PURPOSE: To obtain a parallel beam conversion system to be integrated adaptively to mass production by oppositely arranging grated index type (GI) optical fibers 5 having prescribed length and diameter on both the sides of grooves with a prescribed width formed on a substrate respective in parallel and allowing the optical axes of the opposed GI optical fibers to coincide with each other.

CONSTITUTION: The continuous bodies of the GI optical fibers are embedded in respective optical fibers 3 so that the GI

optical fibers 5 respectively having a prescribed length L are left on both the end parts of the upper face of a substrate 2 and grooves having prescribed depth D and width are cut on the intermediate part of the upper face of the base 2. The width of optical fiber holding parts 7 and the length L of the fibers 5 are set up in relation to the refractive index distribution format of



the fibers 5. When the length L (corresponding to the width of each holding part 7) of plural fibers 5 held on the holding parts 7 in a ground state on both the end faces are set up to a proper length, incident light from one side can be collimated to parallel beams. Consequently, the parallel beam conversion system to be compacted and integrated obtained.

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